

SHORT TERM SCIENTIFIC MISSION (STSM) SCIENTIFIC REPORT

This report is submitted for approval by the STSM applicant to the STSM coordinator

Action number: 16224

STSM title: Field Arena Objective 3

STSM start and end date: 02/01/2019 to 30/04/2019

Grantee name: Lucie Michel

PURPOSE OF THE STSM:

The purpose of the Short-Term Scientific Mission (STSM) carried out by Lucie Michel (Giessen University, Germany) in Rome (IT) in collaboration with the scientific Association *Ornis italica* and Giacomo Dell'Omo was to assess current sampling practice and develop best practice guidance for collecting raptor samples and relevant contextual field data for contaminant monitoring purposes. The focus of the STSM was to give specific practical guidance on sampling Peregrine Falcons from urban environments, whereas most of the information would be applicative for other falcons as well. The specific field guidance was produced to promote harmonized sampling and account for best utilization of data for contaminant studies.

DESCRIPTION OF WORK CARRIED OUT DURING THE STSMS

During the STSM raptor field Guidance and protocols were reviewed to produce species- or genus-specific best practice Guidelines for the collection of contextual data. In a first phase a literature search was carried out to find out existing protocols and raptor guidelines. The history of Peregrine urbanization, the capacities for Peregrine contaminant studies, and the status of urban populations across Europe today have been assessed. During the Working Group 4 workshop in Thessaloniki the results were presented and provided a base for the elaboration of requirements for best practice guidance in collaboration with the participating field experts. After the workshop a draft was developed describing the aims and contents of the protocol. In a subsequent meeting in Florence the draft was presented to the COST Members and further discussed, especially in regard to issues that are specific for urban Peregrines. Then, before the end of the STSM the document draft was distributed to the participating COST Members (which offered their support during the Thessaloniki and Florence Meetings) to obtain reviews and opinions.

DESCRIPTION OF THE MAIN RESULTS OBTAINED

The literature search showed that general raptor field guidances are already available and some are well elaborated. Therefore, the aims of the protocol were defined in order to produce a guideline specific for the sampling of Peregrines and other falcons and informative for proper collection of contextual data for contaminant studies.

Peregrines are suitable for contaminant monitoring as shown by their sensitivity in the history of DDT contamination. . The population decline because of DDT contamination, commenced in the 1950 and brought them to the border of extinction in several areas in the seventies. The problem of egg shell thinning related to exposure to DDT was firstly detected in Peregrine eggs. Today Peregrine have recovered in most of their original areas and have expanded into new, urban habitats. They are spread all over Europe which makes them a good model for pan European studies and they live in vicinity to human settlements, which makes them useful indicators for urban living quality. Many urban nests are easy to access and many of them are monitored with webcams. Especially in the Netherlands, UK, and Belgium a dense webcam network exists. The webcams offer a good opportunity to obtain contextual data.

Peregrines are popular and they can be a good flag species and promote citizen science for monitoring of urban populations. The main contaminants for which Peregrines are suitable monitors are:

- Pharmaceuticals
- Perfluorinated compounds
- Flame retardants
- Organochlorine insecticides (DDT, especially)
- Metals and metalloids
- PCBs

It has been reported that anticoagulant rodenticides are used to poison urban pigeons, which means that rodenticides can be a threat to Peregrines, even though they might not be expected to cause problems in the first place, due to their exclusively avian prey.

Contextual data contributes to the interpretation of contaminant analyses and to conclusions for conservation and contaminant regulations. The following topics are included into the protocol:

- Basic contextual data
- Observing, handling, and timing
- Body and egg measurements and formulas for chick aging and sexing
- Determining breeding parameters
- Feather collection
- Prey item determination
- Background contextual data
- Dealing with public attention
- Dealing with intentional poisoning

FUTURE COLLABORATIONS (if applicable)

All comments and corrections that contribute to the improvement and completeness of the guidelines will be integrated into the final document. To complete the guidelines a template data sheet will be provided and literature for further reading as well as useful links will be circulated among the experts and when feedbacks will be received added into an Appendix.

More opportunities could raise, within the COST activities, when there will be need for organising sample collection across Europe for collaborative contaminant analyses.